1011-14-42 **Yasuyuki Kachi*** (kachi@math.ku.edu), Department of Mathematics, Snow Hall, University of Kansas, 1460 Jayhawk Boulevard, Lawrence, KS 66045-7523. *Birational Equivalence, Linear Systems, and Desingularization.*

In the talk I introduce an object Spv X which represents the birational equivalence class of an algebraic variety X and which admits a morphism to X. I define Spv (X) as a certain functor which mimics Hom (Spec (*), X) : (Ring) $\longrightarrow$ (Set). I also define its completion Spv $\hat{}(X)$, using linear systems, and show that it is the categorical limit of proper models birational to X. In the course it arises a group functor SG_n which is a uniform analog of GL_n and which reflects a composition algorithm of blow-ups. $SG_n(k)$ naturally acts on a certain classifying space of uniformizing parameters $\mathcal{S}_n(k)$. I show that the transitivity of such action is a uniform analog of Cutkosky's factorization theorem. Using SG_n, I also formulate a statement on constructibility of power series and show that it recovers the desingularization of an algebraic variety locally along a valuation. (Received July 29, 2005)